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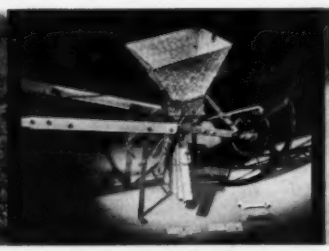

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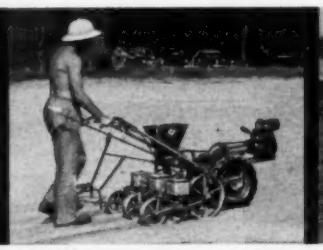

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(Commercial Vegetable Grower)

Vol. 2 MARCH, 1954 No. 3

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E. G. K. MEISTER
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Editorial Staff

R. T. MEISTER — ELDON S. BANTA
E. K. GOULD — M. A. FRAZIER
R. L. CAROLUS — M. P. RASMUSSEN
H. B. TUKEY

Advertising Manager
EDWARD L. MEISTER

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CHICAGO, Peck and Billingslea, Inc., 185 No. Wabash. Phone—Dearborn 2-0292
NEW YORK, Martin-Snow Co., Suite C904, 270 Park Ave. Phone—Plaza 9-5559
PHILADELPHIA, Clayton S. Staley, Jr., 1138 Lincoln Liberty Bldg. Phone—Locust 7-7448
SAN FRANCISCO, McDonald-Thompson, 625 Market St. Phone—Yukon 6-0647
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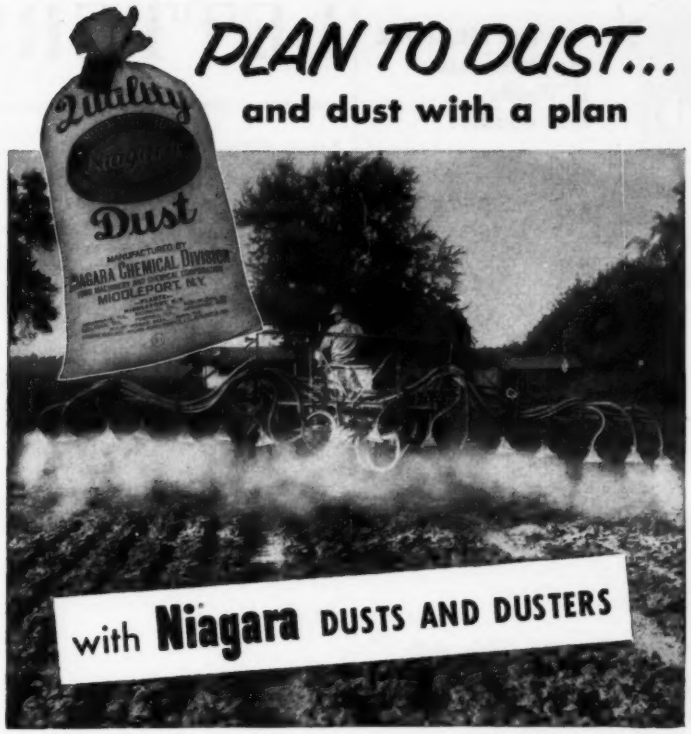

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LETTERS TO THE EDITOR

Likes Editorial on Leadership

Dear Editor:

Glad to tell you that your AMERICAN VEGETABLE GROWER Magazine carries some excellent stories on what the other fellow is doing coupled with what machinery can do to fill the gap left by labor shortage.

Your editorial in the December, 1953, issue on "Leadership" shows good thinking. I am going to mail the clipping to my son who is in charge of Leadership Training at Camp Gordon, Ga.

Regardless of age, farm managers and owners need to read these sound facts you have brought to the surface in this good editorial. Putting into practice such truths would create and maintain good labor relations on the farm.

My sincere thanks to you for writing this and may this year be a prosperous one for both of your excellent magazines.

Mentor, Ohio — R. E. Siegel

Cost Figures

Dear Editor:

I have been interested in recent issues of your magazines in the articles on reducing labor costs. Do you have any cost figures on hand for the labor required in harvesting turnips and parsnips? What is considered a good rate of pay for pulling and topping turnips? Do most growers pay an hourly wage or is the pay based on piece work?

Decatur, Ill. — C. Miller

Michigan growers figure on about 75 to 90 cents per hour for most vegetable workers. This should be equal to approximately 15 to 20 cents per bushel. If the crops could be harvested mechanically the cost would probably be considerably lower. For some areas the price is generally based on piece work and the price paid would depend on the production or the quality or uniformity of the stand.—Ed.

Yolo Wonder Pepper

Dear Editor:

We call your attention to page 11 of your January, 1954, issue in which you state that Yolo Wonder pepper is an Asgrow introduction. Dr. Don Porter of Campbell Soup Co. developed this variety and distributed it to various seed growers.

Santa Ana, Calif. — L. S. Haven

We wish to thank Reader Haven for setting the records straight for our readers. —Ed.

California's Lettuce Industry

Dear Editor:

I was very much interested in the article, "Recent Developments in California's Lettuce Industry," featured in the December, 1953, issue of your magazine. I was especially interested in the portion dealing with lettuce mosaic virus which is a serious disease in California lettuce. I presume that this is the same disease which we in Michigan call "asters yellow." Do you know where I could get further information on mosaic virus and its control?

Grant, Mich. — Grant Scholtens

I suggest you contact Dr. J. E. Welch, Department of Vegetable Crops, University of California, Davis, Calif., who was one of the authors of the article.—Ed.

Electric Hotbed Pays Off

Dear Editor:

Your article on the greenhouse industry in Michigan in a recent issue was of interest to me, and I thought perhaps your readers would like to know about my experiences with hotbeds.

In 1951 I built a 6x9-foot electric hotbed. The cost was as follows: electric cable $11.25, thermostat $7.75, sashes and plastic covering $2.75, lumber $2.50, miscellaneous expense $4.50.

That same spring I grew all the sweetpotato, pepper, tomato, eggplant, cauliflower, and celery plants we needed for family use, plus we sold many plants.

I sold over 1,200 tomato plants in May, 1952, and I could have sold more if I had made my bed twice as large. My 1954 beds are three times larger, and I already have orders for all the plants I can raise.

I find by using electricity, I can have plants ready for setting in our garden whenever I want them, and in winter I can have lettuce, radishes, and green vegetables daily from my backyard.

Hammonton, N. J. — Elgin C. Wade

Onions From Cabbage Seed

Dear Editor:

Yes, "The Best Seed is No Luxury," thanks to your January issue. We here in Walla Walla are going to demand seeds just like the ones shown on page 7. For some 75 years now we have been planting "onion" seed and getting cabbage, "cabbage" seed and getting onions. Our "okra" seed has invariably resulted in carrots. Now, at last, our eyes have been opened.

Walla Walla, Wash. — Joe J. Locati

Dear Editor:

I suppose by now several thousand of your subscribers have called your attention to the switching of captions on page 7 of your January, 1954, issue of AMERICAN VEGETABLE GROWER. However, just in case everybody else has figured that someone else has called it to your attention, I thought I'd mention it to you.

The captions for carrot and okra were reversed as were the captions for cabbage and onion.

Philadelphia, Pa. — L. G. Schermerhorn, Jr.

The onion and cabbage seed on page 7 of our January issue were reversed as well as the okra and carrot seed photos on the same page. We hasten to acknowledge that this was our slip up and not that of author and photographer Victor Boswell, who was kind enough to prepare the pictures especially for AMERICAN VEGETABLE GROWER.*—Ed.*

Spray and Dust Rolls Around Plants with Buffalo Turbine Concentrate Sprayer

IN SPRAYING or dusting vegetable plants it is important to obtain complete coverage of the plants. A thin layer of protective spray or dust must envelope the plant including the under sides of the leaves. Turbulent air as a carrier for controlling chemicals has been found to be the most effective way of applying such materials. In the Buffalo Turbine the air discharge can be adjusted from a gentle breeze to a hurricane of 175 M.P.H. Such turbulence gives control and penetration over broad areas which is not possible with spray booms.

Michigan Grower Compares Buffalo Turbine With Others

"As you know it was the middle of the dusting season before I purchased my machine, so I had a good opportunity to check the kill of the Turbine applied insecticides against my Row Crop duster. My first dustings were applied with my row crop duster and I used from 35 to 40 pounds of dust on an acre and got just a fair kill. I then started using the Turbine and found that while using less dust the coverage was much better and for the rest of the season I had a 100% kill. I might add that at first I was fearful that I did not have enough dust on the plants, but on examining them I found that there was a perfect film of dust on both sides of the plants. The rolling action of the dust enveloped the plants and dust seemed to boil in the rows a long time after being dusted.

"This last year I dusted about 70 acres with the Turbine, consisting of beans, sweet corn, cabbage, cauliflower, cucumbers, tomatoes and squash. I was able to do on an average of 12 acres an hour and would again say that the dust is put where needed with the Turbine, this especially showed up on cabbage and cauliflower where I was able to get dust on the under side of the leaves and also down into the heart of the plant. During dry season I used water with the dust to make it stick and found this to be a very decided advantage for this machine. I am planning on spraying all my peas this year also.

"I think that this machine is one of the most practical pieces of equipment that can be used in my type of farming.

BUFFALO TURBINE
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Gentlemen—Please send me full information on the Buffalo Turbine Sprayer-Duster.

I have approximately _____ acres in vegetables consisting mostly of _____

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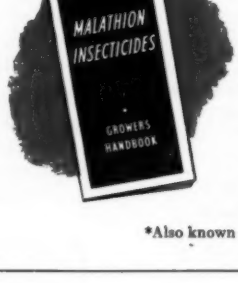
Find out how malathion can help *you* control insects more easily, farm more profitably. Write today for free booklet.

Good control of Mexican bean beetle, red spider

Grower reports show that malathion applied at 1½ pints of 50% emulsion per acre has given good control of Mexican bean beetle and red spider on snaps and limas. Malathion also controls bean leafhoppers and many other vegetable pests.



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GROWING PLANTS *for the* NORTHERN MARKET

Rigid supervision governs the production of quality plants in a small concentrated area in southern Georgia

By **RAYMOND SHELDRAKE, JR.**
Georgia Agricultural Extension Service

FEW of us ever stop to realize the tremendous importance of a localized industry being carried on in the small area of about eight counties in southern Georgia. A large portion of the eastern shore area and many northern and midwestern states are dependent upon this area for tomato plants. Over 7,000 acres were planted last year to tomato plants. Plants of many other kinds of vegetables also are grown in this area in substantial acreages.

This is a closely supervised, unique industry. The same group of growers for the most part produce these plants year after year under the watchful eye of the Georgia department of entomology and the USDA, both of whom maintain field laboratories in Tifton, Ga.

A large percentage of the plants are grown under contract for large canning companies and many of these companies have their own fieldmen in the area during the period that the plants are being grown.

Acreage of the various varieties of tomatoes grown for certification in 1953 was:

Variety	*Acres*
Rutgers	4,511
Marglobe	93
Valiant	168
F_2 Hybrid	477
Stokedale	52
Garden State	1,238
Others	274

The Coastal Plain Experiment Station recommends that tomato plants be grown in a nematode-free soil. They prefer virgin soil but this is often not possible. If virgin soil is not available, the plants should follow crops highly resistant to root-knot nematode, such as oats, crotolaria, and corn. They should never be planted after cowpeas, tobacco, okra, sweetpotatoes, melons, or other nematode-susceptible crops. In order to further minimize losses from insects and diseases, plants are rarely planted on land that has been used for tomatoes or truck crops for several years.

A good commercial fertilizer is usually broadcast at the rate of about 600 to 800 pounds per acre. Additional nitrogen has to be used in most cases. Growers have developed a technique of "bringing off" the plants of good size at the time they are needed in the transplanting areas.

Most plant growers drill the seed in long rows with multiple-row seeders, the rows averaging about 16 inches apart. At the seeding rate used, three to four pounds of seed are required to plant an acre. Seeding begins in late January and continues through the first part of May. Plants begin to move out in the last week of March and shipments are made through June.

One of the most important factors in the production of tomatoes in this area is disease control. For example, almost 1,800 acres were revoked for the presence of *Aternaria solani* alone.

A rigid spray schedule is recommended by the Georgia department of entomology. Growers can either use one of the organic fungicides, such as Dithane Z-78, zineb, Parzate, or Manzate, or a spray containing fixed coppers. The only acceptible dust formulation contains seven per cent copper.

The first application of fungicide is made when the plants have their first true leaves. Subsequent applications are made at five to seven-day intervals. A pre-pulling application is recommended for two or three days prior to pulling. The entomologists urge growers to apply chlordane in this last spray to give some protection against insects after transplanting.

At plant pulling time truckloads of hands are seen rolling into this area to begin this big task. The plants are taken from the field after pulling to large tobacco warehouses where groups sort and pack them in moss for shipping. Certification labels are attached to the bundles. THE END

Careful inspections are frequently made by members of the Georgia department of entomology. Experiment Station Horticulturist S. A. Harman and Extension Specialist L. E. Farmer are shown in a field of Rutgers tomato plants on the farm of Paul Fulwood, Tifton, Ga.

Methyl bromide, a soil fumigant, kills dormant weed seeds in manure and soil used for plant growing. Left side of this pile of compost manure is untreated; right treated with methyl bromide.

KILL WEEDS Before You See Them

New herbicides prevent costly weeds from developing—but it is important to know which chemicals can be safely used on your crops

By C. F. WARREN
Purdue University

THE use of chemicals to control weeds in vegetable crops has expanded greatly in the past few years. But most of this expansion has not been in selective sprays like Stoddard solvent as used on carrots, rather it has been in the use of the pre-emergence type of herbicides. Many chemicals when applied to the soil surface will kill germinating weed seeds. Some will also control established weeds while others are effective only on the seedlings. They are usually applied after planting but before crop emergence although in some cases they may be sprayed directly over established crops, after a clean cultivation, to kill the later germinating weeds.

Some of the herbicides that were originally developed for use as post-emergence selective sprays have found a real place, at heavier rates, for pre-emergence weed control. These include 2, 4-D, the dinitros, and sodium PCP. Among the more recent introductions, TCA, chloro-IPC, CMU, Alanap 1 (N-1 napthyl phthalamic acid) and Crag Herbicide 1 (SES) are all of the pre-emergence type. There are also contact herbicides that are used to kill small weeds that come up before the crop but have little or no residual effect. These latter materials have important uses but will not be included in this discussion.

Each material has a different type of action and a different range of selectivity on both crops and weeds. For example, chloro-IPC gives good control of smartweed, purslane, chickweed, and annual grasses in spinach but is not effective on lamb's quarters and kills both melons and cucumbers. Alanap 1, on the other hand, will control lamb's quarters as well as purslane, chickweed, and annual grasses in melons and cucumbers but is not effective on smartweed and causes severe injury to spinach. The grower must therefore know both what weed killers can be safely used on each of his crops and which ones give best control of the kinds of weeds present in his fields.

The soil type will greatly affect the rate of application required to control weeds and the danger of injury to the crop. In general, the heavier the soil or the higher the organic matter content, the higher the rate of application required. Chloro-IPC, for example, is used at rates as low as one to two pounds per acre on some light sandy soils but on muck eight pounds or more may be required. Similar examples could be cited for several herbicides. However, TCA and 2, 4-D are not so greatly affected by soil type as regards the rate of application required.

The danger of injury to the crop is often less on the heavier soils or those higher in organic matter since leaching of the chemical to the crop seed is usually slower. For example, a few growers have used low rates of 2, 4-D as a pre-emergence spray on deep planted onions on muck soil, yet the same treatment on mineral soil kills the onions. This, however, will not be an important factor if the crop has true resistance to the herbicide at the rates used. For example TCA moves rapidly in all soil types and usually

Untreated row of field-seeded cabbage. Note crabgrass and broadleaved weeds. Compare with photo on right.

Field-seeded cabbage sprayed two days after planting with five pounds per acre of 90 per cent sodium TCA. Grass controlled but not broadleaved weeds. Compare with photo on left.

Control of midseason weeds in onions after clean cultivation was accomplished in row on right with a spray of eight pounds of chloro-IPC per acre. Row on left untreated.

right behind the planter, especially for beans. The rate of application can be reduced, however, if the treatment is delayed until a day or two before the crop comes up.

Chloro-IPC promises to be one of the leading herbicides for vegetable growers. Extensive field applications are already being made on the East Coast on spinach, lettuce, kale, collards, and cabbage. On muck and heavy mineral soils it has given excellent control of smartweed, purslane, and certain other weeds in onions. In this crop it can be applied either as a preemergence or post-emergence spray, the latter treatment being especially good for purslane which usually germinates late. Snap and lima beans have also shown good tolerance to chloro-IPC but here it must compete with the dinitro compounds. Which material will be best on a given farm will depend to a large extent on the kind of weeds present. In experimental trials, results have also been promising on carrots and celery.

Untreated asparagus bed on sandy soil grown up with crabgrass. Compare with photo on right showing treated asparagus bed.

Asparagus bed sprayed immediately after spring disking with four pounds per acre of Alanap. Photograph taken eight weeks following treatment.

comes in contact with the germinating crop seed, yet it is used to selectively control annual grasses in beets and other vegetables. In this case we know that the crop is truly resistant to the chemical.

Another factor that influences results with all of these herbicides is soil moisture. Weed control is generally best if the soil surface is moist at time of treatment or if a rain follows within a few days afterward. Growers equipped with sprinkler irrigation are therefore in an ideal position to obtain maximum effectiveness.

Dinitro formulations such as Premerge and Sinox PE are being widely used to control weeds in snap and lima beans, sweet corn, and potatoes. The chemical is sometimes applied

(*Continued on page 26*)

Effectiveness of PESTICIDES on

Here is an evaluation of some of the most prominent and promising materials with the insects they control

By JOHN E. SWIFT
University of California

Root system of honeydew melon injured by larval feeding of cucumber beetle. Photo by A. E. Michelbacher, University of California.

VEGETABLE pest control is complicated by the fact usually that the portion of the plant we are trying to protect is the edible part and therefore selection of the proper pesticide is sometimes difficult. This problem is further complicated by the inconsistency of insect and mite attacks on vegetables.

In certain crops like deciduous fruits, nuts, and grapes, spray programs can be developed and planned for a year in advance. Much of the spraying on these crops is of a preventative nature as the farmer can be rather certain that a given pest or disease will appear if these treatments are not made. To be sure, occasional unexpected outbreaks occur on these crops, but not so often as they do on vegetables.

Usually most vegetable pests appear suddenly and immediate control measures are necessary. Some pests do appear year after year on vegetables but even these vary in their density of population and time of attack; consequently, a spray or dust application cannot be planned for on a given date during a given month. The fact that most of the pests appear at infrequent intervals and at different population levels serves to make vegetable pest control a very dynamic process.

Occasionally a pest that has not been known to attack vegetables will suddenly become a pest and cause a serious loss before it is discovered. An example of this was the attack by the California tussock moth on broccoli in California last year.

An effective pesticide for vegetables is one that will kill the pests over a long period of time, will not upset the beneficial insect balance, the drift from the application will not harm man, animals, or pollinating insects; it will not leave a harmful residue and will not injure the plant. Realizing that such a material as this would be nearly impossible to produce, we must use the insecticides available and plan our programs so that we can obtain as many as possible of the above-mentioned goals.

In an effort to accomplish this, control programs frequently do not include the most toxic nor the longest lasting materials available. Recommendations for control of pests should be "tailored" for the individual pest on a specific crop. By doing this we can fulfill many of the desirable features of the previously mentioned ideal insecticide and at the same time eliminate some of the most obviously detrimental features.

Timing is a critical factor in vegetable pest control and the selection of the proper material is dependent upon the time of the attack. Because of these many factors that must be considered we feel that best results can be obtained from a program which we in California term as "Supervised Control of Insects." In a program of this nature a trained entomologist will observe and recommend pest control measures on a given number of acres. This will usually vary from 7,000 to 9,000 acres.

This man visits the crops at least once a week and oftener if necessary and is thus able to find an infestation in its earliest stages. He then watches the infestation and recommends control measures when he feels the time is most appropriate. The supervising entomologist considers all phases of the problem such as the economic level of treatment, effect of predators and parasites, off flavor because of an insecticide, phytotoxicity, and cost. This method gives a farmer assurance of a well-balanced program and the best control measures available at that time.

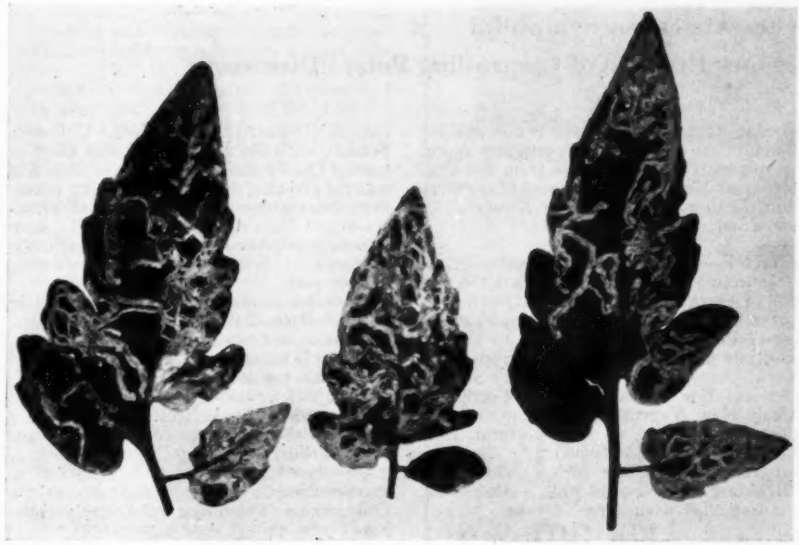
We are fortunate at this time to have a host of pesticides to use on the various pests that bother vegetable crops. It would be nearly impossible to categorically define all of the pesticides in their order of performance because of the specificity shown by the various materials. However, we can be assured that there is a pesticide available for most of the major pests. A true evaluation of the effectiveness of the various materials is based on many factors and in some cases an extremely short residual effect makes a certain material more valuable that a material with a long residual effect, and of course the opposite is true for other pests on other crops.

Some of the most prominent and promising materials are mentioned below:

DDT is probably the best known of the newer insecticides and probably is the most widely used in vegetable crop production. It kills by contact and as a stomach poison. It is effective against most caterpillars, beetles, cutworms, armyworms, thrips, many leafhoppers and other true bugs, some aphids, whiteflies, and other insects of that nature. It is a preferred material because of its long lasting effect and its ability to kill many different kinds of insects.

It has some disadvantages: the long residual effect makes it undesirable to

ES on VEGETABLES



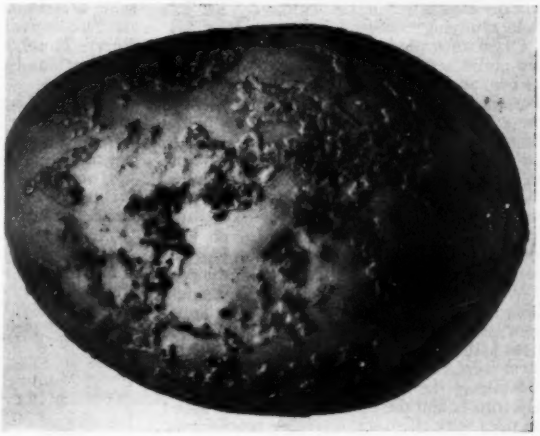
Leafminer injury to tomato leaflets. Photograph by A. E. Michelbacher.

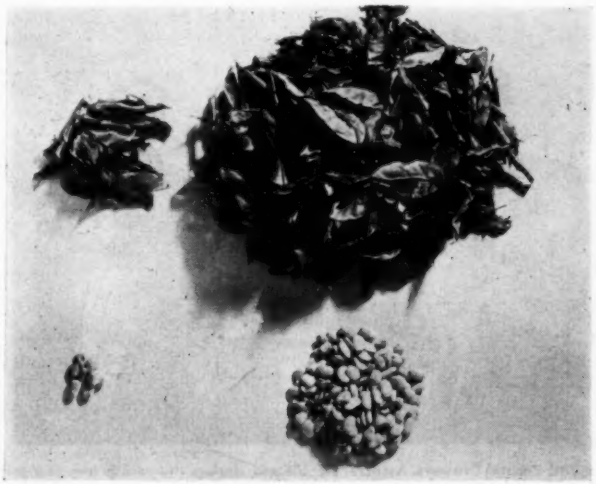
use on the edible portions of crops; it will also kill many beneficial insects; and large spider mite populations may develop because of its use. It can be stored in the body-fat of animals and therefore should not be used on that portion of the crop that may be eaten by man or animals. In spite of its disadvantages it is still one of our most effective and useful pesticides in vegetable production.

Benzene hexachloride is another chemical that is used sometimes in vegetables, but it is much more restricted than DDT. It does not control quite an many insects as DDT, but it does control some that DDT is not effective upon. However, its disagreeable odor and its ability to impart off-flavors to certain vegetables and its high phytotoxicity to certain crops, especially cucurbits, have restricted its use. The pure gamma isomer of BHC has a somewhat wider use but it is still much less than DDT. It will control grasshoppers, many aphids, stink bugs and other true bugs, some caterpillars, and wireworms. It is not highly recommended as a vegetable crop pesticide.

Toxaphene is a material that has had a somewhat restricted usage but as time goes on more uses are being found for it. It has shown up quite well on cutworms and several other types of caterpillars and it is effective on grasshoppers, stink bugs, Lygus bugs, leafminers, some scale insects, and several kinds of beetles. However, it is very destructive to many beneficial insects, it injures some cucurbits seriously, and is more toxic to warm-blooded animals than DDT. This latter effect is somewhat nullified by its shorter residual effect than DDT, but this is still not enough to suggest its use on edible portion of crops.

Cucumber beetle injury to honeydew melon. Light colored corky tissue is result of adult feeding; dark pitted areas in center caused by larval feeding. Photograph taken by A. E. Michelbacher.





Effect of Lygus bug feeding on lima beans. Small pile on left, from DDT-treated area, shows total number of injured beans and pods from 50 plants. Large pile on right shows total number of injured beans and pods from untreated area. Photo by W. W. Middlekauf, University of California.

Chlordane, another new material, has a somewhat more limited usage than some of the other materials, but it is very good against certain pests. It is very effective against ants, crickets and grasshoppers, and certain seed and bulb maggots. It is effective on some caterpillars but, on the whole, is not too good for caterpillar control. Although it is a good insecticide, it is not too widely used on vegetable crops because of its specificity.

(*Continued on page 24*)

STATE NEWS

- **Oregon Launches Attack on Symphilid**
- **New Materials Show Promise of Controlling Potato Diseases**

GEORGIA—Many growers are getting ready to plant pimiento peppers for the first time this year. This has been brought about by the decreased acreage in cotton and other crops. Growers are urged to get a copy of bulletin No. 277 which is available at their county agent's office or from the Georgia Experiment Station, Experiment, Ga.—*Raymond Sheldrake, Jr., Asst. Ext. Hort., Athens.*

OREGON—Plans for an accelerated attack on the symphilid were made at a recent special industry meeting in Portland. The symphilid, a tiny, wormlike pest, annually costs Oregon and Washington truck and nursery crop growers many thousands of dollars.

The raw product committee of the Northwest Canners Association, headed by Donald Burnett, Portland, has taken the lead in the attack and a "symphilid defense committee" was set up for the purpose of raising funds for research work at Oregon State College where H. E. Harrison, entomologist, has been studying the pest for some 16 years.

Often miscalled "insect" or "worm," the symphilid actually has a classification all of its own and is thought by some experts to be a connecting link between the centipede and the true insect. The symphilids stay in the subsoil during the cold weather, coming to the topsoil in the spring and summer to dine on seeds and fine root hairs of many plants.

The pest is described as a small, white, centipedelike animal which varies in size from one-eighth to one-quarter of an inch long. The threadlike, delicate creature has 12 pairs of legs; moves rapidly through the soil.

Whatever his classification, the "simp" causes considerable damage in the way of poor stands and stunted growth of plants. Loss estimates as high as $5,000 on a single farm were reported this past year.

Some of the new chemicals offer promise as controls and the committee hopes to speed up tests with them by providing more funds. —*Harold and Lillie Larsen.*

CALIFORNIA—Planting conditions for Kern County potatoes have been ideal during the past weeks. The early crop at Edison is now planted with about 9,500 acres. It is estimated that Kern County plantings will be somewhat reduced from last year's crop.—*D. N. Wright, Farm Advisor, Bakersfield.*

KENTUCKY—Allyl alcohol has repeatedly shown promise at the Kentucky Agricultural Experiment Station as a weed killer, especially for plant beds, greenhouses, hotbeds, and cold frames. Recent experiments have shown it to be a powerful fungicide in the control of damping-off. Allyl alcohol not only destroys weed seedlings (both grasses and broadleaf weeds) but weed seed as well. Its principal disadvantage is the fact that large quantities of water are needed in applying it as a soil drench. Allyl alcohol has not been available commercially as a weed killer, but one company is now making plans for its distribution. A progress report on this material is available from the University of Kentucky department of horticulture, Lexington.—*J. Edward Klinker, Assoc. Hort., Lexington.*

MAINE—A commercial vegetable growers' meeting will be held on April 6, the first day of Farm and Home Week (April 6–8) at the University of Maine, Orono. Featured out-of-state speaker will be M. T. Vittum, associate professor of vegetable crops, New York Agricultural Experiment Station, Geneva. His subjects: "New Fertilizers Mean New Vegetable Fertilization Practices," and "How to Use 'Natural Heat Units' in Vegetable Growing." The day's program will conclude with a color movie, "Breeding Better Food Crops."—*Robert W. Paulson, Ext. Veg. Spec., Orono.*

OHIO—On February 1–3 the Ohio Vegetable and Potato Growers Association held its 39th annual meeting in the Commodore Perry Hotel, Toledo. Presiding over the meeting was Ferris Owen, vegetable grower of Newark.

Of special interest to potato growers was the discussion of potato insect control by J. P. Sleesman, entomologist at the Ohio Experiment Station. He pointed out that the new material dieldrin when combined with DDT makes one of the best potato sprays. Practically all foliage insects can be controlled satisfactorily with these materials.

Marketing problems and their solution were high on the potato growers' program. Carroll H. Bartter, grower from Columbia Station, led a discussion on what it takes to market Ohio potatoes. His point of emphasis was the growing of a superior quality potato first, then combining the efforts of all growers to sell Ohio potatoes in Ohio. The state consumes considerably more potatoes than is produced in it, hence the market is considered good.

Greenhouse operators were interested in R. B. Neiswander's discussion of the limitations of the honeybee in pollinating tomatoes, and what is being done to make pollination of greenhouse tomatoes more satisfactory. I. C. Hoffman described much of the research work at the Ohio Agricultural Experiment Station with greenhouse crops. L. J. Alexander described the breeding program to produce new tomato varieties resistant to mosaic, blotchy ripening, and wilt at the Ohio station. The future looks very promising.

How to grow plants, and grow them to perfection, came in for a roundtable discussion by growers and specialists from the experiment station. The trend is to grow plants in sand and peat mixture or in sand alone rather than in soil. This medium gives the grower better control over watering and nutrient level, thus enabling him to grow plants that are healthy and have an adequate root system.

Nematodes and some recently discovered methods of controlling them were described by Keith Barrons. For field fumigation he suggested the use of ethylene dibromide or dichloropropene, and for plant beds methyl bromide or chloropicrin can be used. His ob-

Officers of Ohio Vegetable and Potato Growers Association, elected during the recent meeting in Toledo, are: Seated, from left: Leonard Bettinger, Swanton, vice-president, truck crop section; Ferris Owen, Newark, president; Clinton Seitz, Cincinnati, first vice-president; and Vern Kraushaar, Cleveland, vice-president greenhouse section. Standing, from left: E. C. Wittmeyer, Columbus, secretary; Norman Miller, Toledo, director; Christian Babbert, Columbus, treasurer; and Andrew Rosbough, Berea, director.

servations and studies indicate these pests to be more prevalent in the North than has heretofore been thought to be the case.

R. L. Carolus of Michigan State College reviewed the history of vegetable prepackaging and pointed out that the future holds many changes. The alert grower keeps posted on what is happening. In another session Dr. Carolus discussed several phases of the irrigation problem.

Varieties of vegetables described by W. N. Brown of Ohio State University as being outstanding in performance included Golden Security and Calumet sweet corn, Canadian Acre cabbage, Waltham 29 broccoli, Yolo Wonder and Illinois F5 peppers, Gold Spike and Imperata carrots, and Utah 5270 celery.

Breeding new varieties of vegetables, especially those resistant to diseases, was the subject of Victor R. Boswell of the USDA Research Center, Beltsville, Md. Growers were shown and told of some of the problems that plant breeders and other research men come up against in attempting to solve their problems.

The American Farm Bureau Federation's fruit and vegetable department is now under the direction of John C. Datt. Datt joined the AFBF staff in October, 1950, as assistant director of the department. He is a native of Gibsonia, Pa., and was raised on a dairy and vegetable truck farm. He has a Master of Science degree from Pennsylvania State College, where he specialized in the marketing of fruits and vegetables. The AFBF is located in Chicago.

John C. Datt

F. S. Howlett, head of Ohio's department of horticulture, described the research work with leaf analysis of vegetable plants. This method soon may be a better guide to fertility treatments than soil analysis.

Pest control problems were handled by a panel consisting of E. K. Alban, Dr. Neiswander, T. H. Parks, B. F. Jansen, all of the Ohio Experiment Station, and A. D. Taylor of F. H. Woodruff & Sons, Toledo. Of particular interest was the discussion of Stewart's disease of sweet corn. Dr. Neiswander pointed out that proper control of insects is a key to controlling this disease. Taylor pointed out that if the total of the average temperatures for December, January, and February adds up to more than 90°, the disease will be serious; if below 90, it will not be serious.—*Eldon S. Banta.*

NEW YORK—"Americans are eating more sweet corn than ever before," Dr. Lloyd Davis, Cornell University agricultural economist, told the 75 growers from eastern New York who attended the recent regional conference on sweet corn quality at Kingston. With new growing areas developing, continued efforts must be made to produce a high quality product, he said.

Dr. F. M. Isenberg of Cornell explained how hydrocooling removes field heat quickly from corn, resulting in higher quality corn that can be shipped and still retain its high quality. George Barthel, vice-president of Bar Ro Acres, Wawarsing, described the use of wet strength paper bags and ice for shipping; and George Kessel, American Stores Co., pointed out the preference of both stores and consumers for iced sweet corn.

Chairman of the conference was William Palmer, Ulster County agricultural agent.

(*Continued on page 14*)

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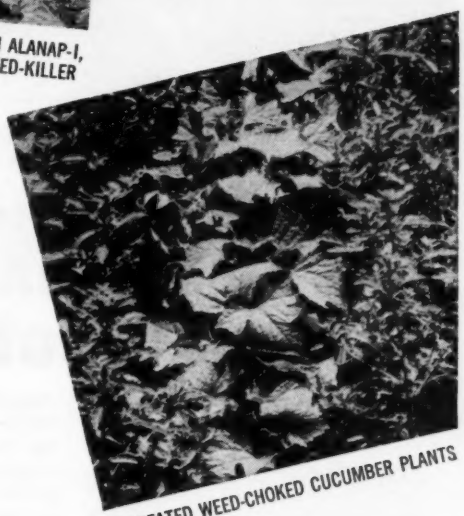
Far less weeding cost with **ALANAP-I*!**



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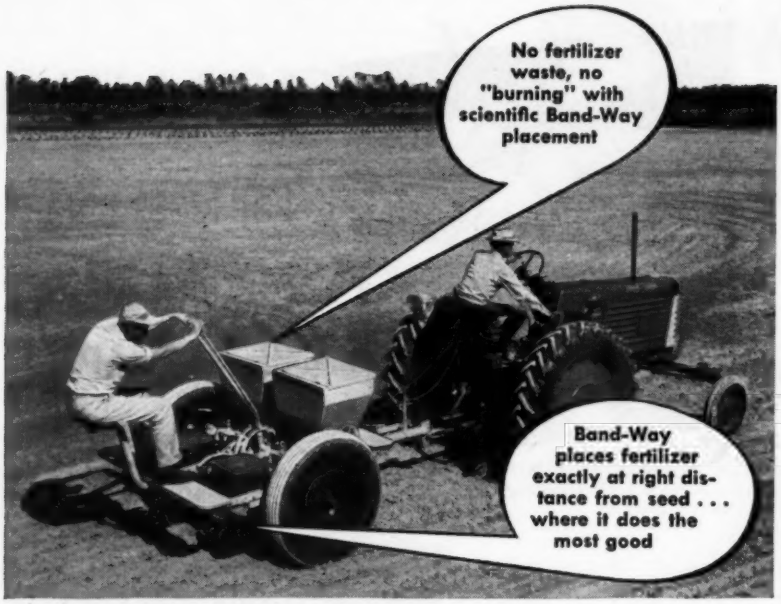
producers of seed protectants, fungicides, miticides, insecticides, growth retardants, herbicides: Spergon, Phygon, Aramite, Synklor, MH, Alanap.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Band-Way places fertilizer exactly at right distance from seed . . . where it does the most good

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STATE NEWS

(*Continued from page 13*)

IOWA—The Iowa State Vegetable Growers Association convened for its 40th annual meeting recently in Mason City.

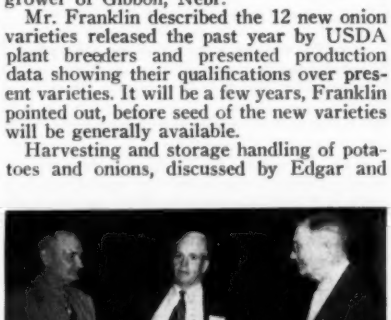
Discussions at this meeting are concentrated on production and marketing of potatoes and onions, the two major vegetable crops of the mucklands of northern Iowa and southern Minnesota and Wisconsin.

Among out-of-state speakers were D. F. Franklin, superintendent of the Branch Experiment Station, Parma, Idaho; A. D. Edgar and R. S. Claycomb, government storage engineers from East Grand Forks, Minn., and Mark E. McConnell, potato grower of Gibbon, Nebr.

Discussing potato and onion disease problems during the recent Iowa Vegetable Growers Association meeting were, from left: John Taylor and Paul Petron of Albert Lea, Minn., and W. J. Hooker, plant pathologist, Iowa State College.

Mr. Franklin described the 12 new onion varieties released the past year by USDA plant breeders and presented production data showing their qualifications over present varieties. It will be a few years, Franklin pointed out, before seed of the new varieties will be generally available.

Harvesting and storage handling of potatoes and onions, discussed by Edgar and Claycomb, attracted a lot of grower interest. Their emphasis was largely upon the use of large pallets for storage and their handling by fork lift trucks as a way to reduce labor costs. Many of their studies have been carried out at Sam Kennedy's farm, Clear Lake, Iowa, who has one of the largest pallet storages in the country.



Irrigation was the subject on the minds of these growers when the photographer "snapped" them during the Iowa Vegetable Growers Association meeting. From left: Martin Hoyer, Washburn, N. D.; Mark E. McConnell, Gibbon, Nebr.; and J. P. Hansen, Otranto, Iowa. McConnell was on the program, discussing his irrigation practices.

Since this muckland area had just experienced a very dry growing season, growers were much interested in the possibilities of irrigation. At present little is done in this area. Mark McConnell told how he irrigates 160 acres of potatoes from two wells on his Nebraska farm. McConnell also discussed the root pruner he built and uses to cut off

CALENDAR OF COMING MEETINGS & EXHIBITS

Mar. 22–23—Kern County Potato Growers Association meeting, Bakersfield, Calif.—D. J. Maupin, Sec'y, Bakersfield.

Apr. 5–8—National Packaging Exposition, Atlantic City.

Apr. 6–8—University of Maine Farm and Home Week, Orono. Apr. 6—Home Vegetable Garden in A.M.; Market Garden all day; Apr. 7—Processing Crops.—Robt. W. Paulson, Veg. Spec., Orono.

Apr. 26–28—Conference on transportation of fresh fruits and vegetables, University of California campus, Davis.

Sept. 23–25—Texas Citrus and Vegetable Growers and Shippers, Inc., annual meeting, Baker and Adolphus hotels, Dallas.—Austin E. Anson, Exe. Mgr., 306 E. Jackson, Harlingen.

Sept. 28–30—Florida Fruit and Vegetable Association annual meeting, Sans Souci Hotel, Miami Beach. Association headquarters: 4401 E. Colonial Drive, Orlando.

potato roots at harvesttime to aid in drying of the vines and ripening of the potatoes.

James R. Kennedy of the Sam Kennedy Farms described the practices they are using to prevent blowing of muck, a big problem in many spring planting seasons. The Kennedys do no plowing of muck as they formerly did. In the rotation, onions usually follow sugar beets. The beet tops are left on top of the ground, in the spring the field is worked over with a springtooth harrow, leveled with a drag, and planted to onions.

The trash mulch effect helps prevent the blowing of the muck until onions are up. Cultivation is delayed as long as possible so as not to destroy this effect. Since a wheel-type onion planter is used, the trash does not interfere with planting.

Several Iowa State College specialists discussed subjects in their respective fields of work. E. P. Lana reported results of potato spacing studies, pointing out that varieties vary in their optimum spacing distance between seed pieces. He also reviewed chemical weed control work on onions. His report suggested to growers that 2, 4-D as a pre-emergence control can give up to 80 per cent control until three weeks after onions are up. Sulfasan at 40 pounds per acre is proving a good control after weeds are about one and a half inches high. The specific weeds that must be controlled is of prime importance as to the effectiveness of any chemical.

Potato and onion diseases with their control measures were discussed by W. J. Hooker. He reported work with a new chemical from Mathieson Chemical Corp. which promises to be of assistance in controlling potato scab. Potato and onion breeding work at Iowa State was reviewed by C. E. Peterson. Dr. Peterson is leaving Iowa March 1 to assume new duties in plant breeding at Michigan State College, East Lansing.

The association voted to return all officers to their respective posts for the year 1954. These include Orville Thoreson, Swea City, president; James R. Kennedy, Clear Lake, vice-president; and C. L. Fitch, Ames, secretary-treasurer.

CONSOLIDATION ANNOUNCED

ALLIANCE Rubber Company, Alliance, Ohio, has announced the consolidation of its Gulf Division plant at Slidell, La., with its Southwestern Division plant at Hot Springs, Ark., and the completion of additional production facilities at Hot Springs.

Alliance is the originator and exclusive producer of the "Open Ring" type of band, of which there are over 300 types used for bunching or tying vegetables or to fasten plastic bags.

Look at these outstanding results on tomatoes . . .

as reported by users of Du Pont MANZATE®

One chemical now does the job of controlling the major diseases on tomatoes. It's Du Pont "Manzate" fungicide. And it not only makes disease control a lot simpler, but also helps produce record yields. Read these typical reports:

"Averaged approximately 25 tons per acre. 'Manzate' did a good job in controlling anthracnose, early blight, and Septoria . . . was a very big factor in enabling me to market the largest yield I have ever grown". . . Chester C. Mauch, Lindsey, Ohio.

"Anthracnose, early blight, and Septoria have been real problems. This year we used a 100% 'Manzate' program, and disease control was the best we ever had. Quality was excellent, and our average yield of 24 tons per acre was the highest we ever had". . . Dean Keller, Blissfield, Mich.

"My crop was entirely free from disease . . . and graded an exceptionally high percentage of No. 1 tomatoes". . . Arthur G. Schroeder, Des Plaines, Ill.

Yes, use "Manzate" all season long. No other product has done as well in controlling tomato diseases and helping to grow high yields of top-quality fruit. Get "Manzate" in 3- or 25-lb. packages.

On all chemicals always follow directions for application. Where warning or caution statements on use of the product are given, read them carefully.

This leaflet....tells how to get best results from this new Du Pont fungicide. See your dealer or write to Du Pont, Grasselli Chemicals Dept., Wilmington, Delaware.

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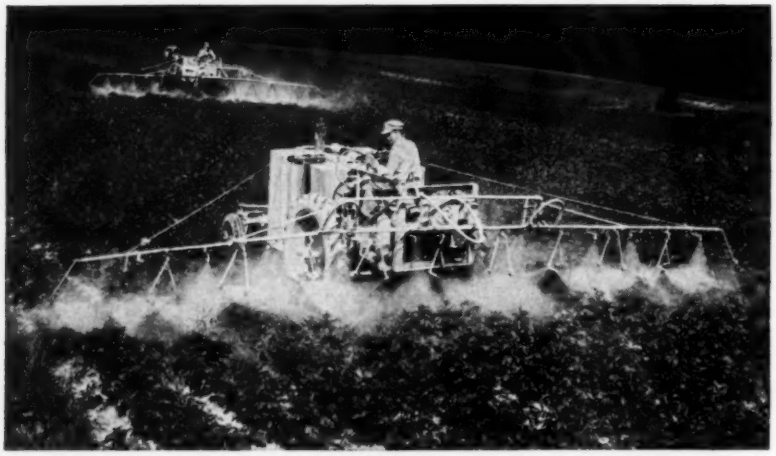
. . . THROUGH CHEMISTRY



For high yields and low-cost blight control...

There's nothing better than Du Pont "Parzate" fungicide. Potato and vegetable yields go up when you control blights and other diseases with "Parzate." It's a mild, effective chemical that does the job without stunting or burning . . . gives your crops vigorous growth and increased yields!

Use "Parzate" for potatoes, onions, tomatoes, celery, spinach, melons, cucumbers, beans, peppers, sweet corn and other vegetables. There's "Parzate" liquid for quick-mixing sprays, or "Parzate" dry for sprays or dust mixtures.

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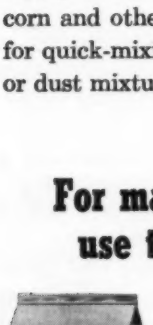

"Marlate" methoxychlor does the job effectively and safely. You get both contact and residual control. Its low toxicity to humans permits use within 7 days of harvest.

On cucumbers, squash, melons, "Marlate" controls both striped and spotted cucumber beetles, squash vine borer and pickleworm without injuring these sensitive plants.

It is excellent for Mexican bean beetle and leafhoppers or snap and lima beans. On DDT-resistant Colorado potato beetles, leafhoppers and flea beetles, "Marlate" has given outstanding control.

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VGAA WORKSHOP CONFERENCE

USDA learns first-hand about industry problems

THE second annual Workshop Conference of the Vegetable Growers Association of America was a huge success. Held in February in Washington, D. C., to acquaint government and USDA leaders with the problems of growers, the conference was attended by more than 250 vegetable leaders including senators and congressmen.

Released acreages came in for considerable discussion. John Wickham, Long Island potato grower and president of the New York State Vegetable Growers Association, pointed out that released acreages will be a problem particularly in Kern County, California, where the shift will be from cotton to potatoes, and in the Red River Valley, where wheat acreages are being cut.

It was pointed out that because of low potato prices, the problem is not expected to be serious this season but could be important for 1955 if growers have anywhere near a good season this year.

Potato Grades

On the subject of proposed changes in U. S. potato grades, W. F. McCaleb, Jr., executive vice-president of the Association of Virginia Potato and Vegetable Growers, Inc., told the USDA that growers should have been consulted about the proposed changes before they were released. McCaleb felt that the changes were made without advice from growers and that if the changes were put into effect they would be harmful to the Virginia potato growers.

Import Problems

Gustave Burmeister, assistant administrator of the Foreign Agricultural Service, told growers that by and large there were two major import problems. One is with Canadian potatoes and the other with Mexican tomatoes.

Burmeister encouraged growers to get together with the Canadians to talk over mutual problems regarding potato marketing. He said that in many cases in the past where the government was unable to solve an import problem, growers have been able to reach partial and in many cases satisfactory solutions by getting together

with the importers and discussing ways and means of reducing the pressure on the market.

Luther Chandler, director of the Florida Fresh Fruit & Vegetable Growers Association, said that the Foreign Agricultural Service needs more funds in order to obtain more detailed facts and figures on foreign trade in agricultural commodities.

The second day of the conference talks were presented by H. Denton Williamson, American Stores Company, on what the consumer wants in vegetables; by Allen Rains, United Fresh Fruit & Vegetable Association, on terminal markets; by Lee Womak, president of the New Jersey Auction Market, on services by auction markets; by Albert Van Ripper, Newark, N. J., Farmers Market, on services by farmers' markets.

Also on the program were E. J. Burress, Safeway Stores, who spoke on services by the chain stores, and Lewis Fox, president of District Grocery Stores, Washington, D. C., whose subject covered services for cooperatives and independent wholesalers. THE END

Secretary of Agriculture Benson and VGAA President Lee Towson were so busy making last-minute changes in their speeches to be presented during the Workshop Conference that they seemingly neglected pretty national vegetable queen Elaine Kernan of Bridgeton, N. J.

Secretary of Agriculture Ezra Taft Benson was honored at a special testimonial dinner by vegetable growers. A. Lee Towson, president of the VGAA, presented Secretary Benson with a silver bowl as an expression of appreciation from vegetable growers for his leadership as Secretary of Agriculture.

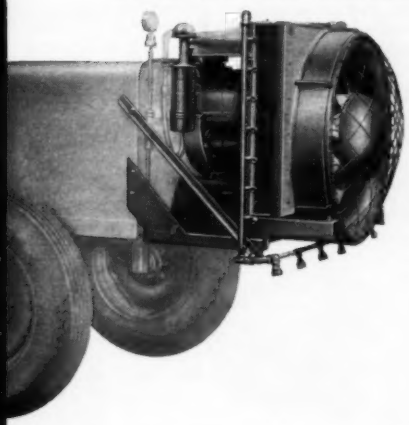
Secretary Benson said that a year ago he made a speech in the Northwest telling about the danger of concentration of power in the federal government and that too many Americans are calling on the government to do what they should and could do themselves. He reported that one of the first organizations to come to his support after that widely criticized speech, was the Vegetable Growers Association of America.

Secretary Benson said that he believes more wholeheartedly today than ever before that our freedom must be continually guarded as something more precious than life itself, and that no man can be completely free who depends upon the state. He said that a planned economy destroys the character and hurts morale and we must help individuals to help themselves with a minimum of government assistance.

MIST SPRAY YOUR ROW CROPS FOR HIGHER YIELDS, LOWER COSTS

The new John Bean Speedaire Row Crop Spreader blankets a field of potatoes.

THE JOHN BEAN SPEEDAIRE



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YOU GET Heavy-Duty Variable Load "Lugging Power" for operating garden tractors, insecticide sprayers and various other machines that work under variable loads which may increase considerably above the normal engine horsepower load.
When the going gets tough and the engine really has to go to work is when Wisconsin Engines show what they're made of! When sudden "shock" loads slow down the engine, your Wisconsin Heavy-Duty Air-Cooled Engine has the "Lugging Power" that *hangs* on like a team of mules leaning into the harness . . . and pulls through without loss of efficiency or stalling. This can be important when you are working against time and weather.

This Montgomery Ward Garden Tractor handles many variable load applications.

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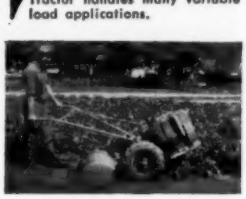

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YOU GET Top Performance Under All Weather Conditions, plus low-cost maintenance and long engine life.

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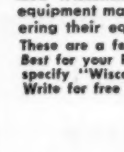
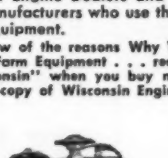
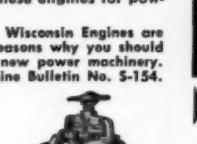


4-cycle single-cylinder models, 3 to 9 hp.



2-cylinder models 7 to 15 hp.



V-type 4-cylinder models 15 to 36 hp.

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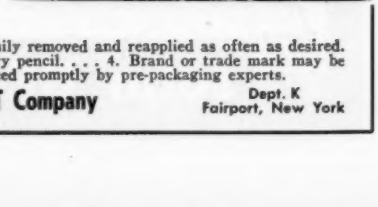
The Trescott right angle belt conveys filled bags to central closing station without spilling. Kwik-Lok closer enables non-skilled help to close bags quickly and easily. Uses plain or special printed tags (with plain bags). Note these other advantages:



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Write today for complete information and prices.

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Fairport, New York

GROWING SWEETPOTATO PLANTS

The Wolfords of Iowa produce them mainly for mail orders

By ELDON S. BANTA

THE PRODUCTION of sweetpotato plants has developed into a major business at the Wolford Brothers' farm, Conesville, Iowa. It isn't a new business to Jason Wolford, who now operates this eastern Iowa sand farm. The beginning dates back to about 1918 when Jason's father and brothers began growing sweetpotato plants for sale, hence the firm name, Wolford Brothers, Inc. Now it is a sizable mail order business. All plants and potatoes are sold under the brand, "Oasis."

The enterprise has grown steadily through the years and recently Jason has placed more emphasis on this phase of their vegetable business. Early each spring Jason and Mrs. Wolford make up and mail out copies of their catalog to over 4,000 potential customers. This is usually a 15-page booklet which describes the varieties that are offered, gives some suggestions on sweetpotato culture, and includes order blanks. Not only are plants sold this way, but seed potatoes too, in the same varieties as the plants.

In 1953 the Wolfords grew over a million and a half sweetpotato plants. A fourth of them they used to set their own 60 acres, the remainder were sold, the bulk going out by parcel post to over half the states in the Union. Demand far exceeds the number of plants they are now able to grow and sell, so they are considering expanding.

Good Market

This is one of the few places in the near north where sweetpotato plants are grown and sold on a commercial scale, hence the market is good. Some plants are sold direct to sweetpotato growers in other areas of the country, but the bulk of Wolford customers are greenhouses and plantsmen. To some of these, the Wolfords ship a given number of plants each week in the spring season; other customers order periodically. These local plantsmen in turn sell the plants to their customers, mostly home gardeners.

For the past few years the Wolfords have received $5 per thousand plants and $5 per bushel for seed potatoes. The customers pays the post-

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One of five plant beds where Jason Wolford grows a million and a half sweetpotato plants. Canvases are used to cover beds in place of glass. During day they are rolled up to let in sunlight.

age or express, and no customer is too small to be considered. They mail order from 100 plants to 100,000, though they prefer the smaller orders. Over the years the greenhouses and local plantsmen have proved to be the most consistant buyers. They can plan for these customers each year, where they cannot for the large commercial orders.

The plant selling season extends from May 1 to June 15. Proper packaging of plants is an important procedure. When an order is received the plants are pulled from the bed, the soil shaken from the roots, the plants dipped into water up to the leaves and then wrapped immediately with about an inch of tops showing.

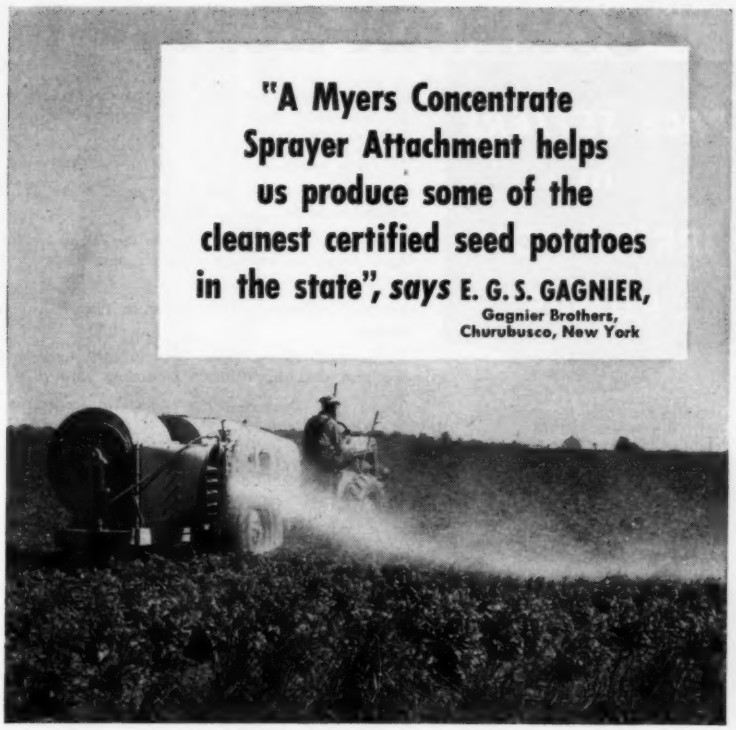
A special wrapping paper is used, made by the Graham Paper Company of St. Louis, Mo., which, when wet does not tear or go to pieces. Since it holds moisture well no additional wrapping is used around the roots, thus shipping weight and postage are left at a minimum. Plants are wrapped 100 to a package. On larger orders, 20 packages, or 200 plants, are packed to a bushel basket, roots down, and covered with a shingle lid. Shipments are made the day plants are pulled.

Plant Growing Practices

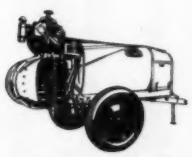
Jason Wolford says, "Maybe we seem old-fashioned, but we still like to make up our plant beds with manure." He feels that manure keeps moisture more constant in beds and heats them more evenly than do hot-water pipes. At least he points to the fact that, in contrast to growers using hot-water heat, he has never had an unsatisfactory bed of plants. It is also easier and quicker for Jason to make his beds with manure.

His procedure is as follows: He starts hauling manure in December or January, whenever he can get it. He prefers buying it by the carload from packing plants in Cedar Rapids for $1.50 per ton, just the cost of

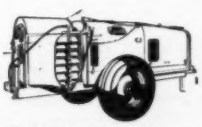
(*Continued on page 20*)


"A Myers Concentrate Sprayer Attachment helps us produce some of the cleanest certified seed potatoes in the state", says E. G. S. GAGNIER,
Gagnier Brothers, Churubusco, New York

GAGNIER BROTHERS POTATOES, CERTIFIED FOR SEED ON AUGUST 14, 1953, WERE DECLARED BY NEW YORK INSPECTORS TO BE AS DISEASE-FREE AS ANY IN THE STATE.



Field Crop Concentrate Blower Attachment



Field Crop Concentrate Sprayer

Every season more leading growers everywhere are finding concentrate spraying an improved, lower cost way of protecting crop quality. They know, too, that either a Myers Concentrate Sprayer or Concentrate Attachment will do a thorough job of applying low-water solutions of 4X or more.

They produce minute droplets of just the right size and spray them at a high velocity in a large volume of air. This assures thorough penetration of plants and even coverage of leaves and stems—better disease protection.

On rolling ground, the tractor operator can adjust the spray pattern easily without leaving the tractor seat and keep the spray where it belongs at all times. These features and many more can be explained by a nearby Myers sprayer dealer.

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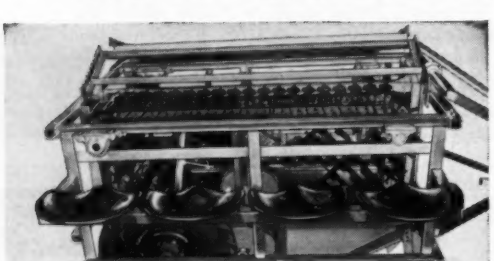

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- Plants up to 30,000 Plants per Hour
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WRITE TODAY for full details on this great new transplanter. New scientific principle guarantees lower mortality, quicker strike, greater yield—plus huge savings in time and labor!

ELCO Products Corp. 8229 W. Greenfield Ave. West Allis 14, Wisconsin

GROWING PLANTS

(*Continued from page 19*)

freight. He also obtains some from livestock sale barns at nearby Iowa City, but trucking charges run up to $2.50 per ton or more. The manure is piled in shallow stacks until ready for use so it won't heat. Then just before putting into plant beds large stacks are made, watered if necessary, and allowed to heat just before placing in the beds.

Plant beds are temporary frame structures and built on new sites each year, as a sanitary measure. A scoop on the tractor removes about seven inches of the sandy soil from the proposed bed site and piles it along the side. The frame is erected, each bed being 100 x 14 feet. Manure is put in to a depth of 12 inches, packed lightly, then covered with four inches of the sandy soil previously removed. Each bed requires about 30 tons of manure.

Sawdust Used

The first layer of sand is firmed lightly, then the seed potatoes laid in. Jason likes to plant them close and in rows with about a quarter of an inch between them. They are then covered with two inches of the sandy soil which has been mixed with sawdust. This mixture, which contains about 30 per cent sawdust, keeps the surface loose and makes it easy for the sprouts to come through.

From five to eight of these beds are made each year at the Wolford farm, the first potatoes going in on April 1. No. 2 potatoes are used for seed, and each bushel produces about 3,000 plants. At bedding time Jason has a crew of seven men who can put in a bed complete, from start to finish, in seven hours. Being able to handle the manure and soil largely by mechanical means, Jason feels is an advantage over using hot water heat, where soil is usually moved out and in by hand.

Quality Plants

Each year from his own fields Jason makes some hill selections of each variety grown. By selecting from strong, healthy plants for his seed, he is sure of selling customers the best plants they can buy anywhere.

Varieties grown in the past few years have been largely of the little stem Yellow Jersey type, such as Manantico, K-35-61, and K-36, improved strains of the Yellow Jersey. Also some Nancy Hall and Porto Rico Yams are grown for a few customers.

This year Wolford's main crop will be that of Oklahoma 46, a new high-yielding variety that has proved its worth in many areas. Little stem Jerseys will also be grown. THE END

ACREAGE GUIDES

THE USDA has announced its 1954 acreage and marketing guides for summer and fall vegetables for fresh use, summer melons, vegetables for processing, sweetpotatoes, and late commercial potatoes.

The acreage recommendations, with average yields, will provide an adequate volume of marketings to meet all requirements, according to the USDA. It is the general policy of the USDA to limit surplus removal assistance to those commodities and areas where there has been substantial compliance with the acreage and marketing guides. On the other hand, compliance with the guides program does not commit the USDA to provide assistance for any commodity or area.

The guides suggest an acreage of summer vegetables for fresh market about equal to that in 1953, a decrease of two per cent for fall vegetables, a decrease of 11 per cent for summer melon crops, and a decrease of five per cent for vegetables for commercial processing. The guide for sweetpotatoes is an acreage for harvest equal to that in 1953. The planted acreage guide for late crop potatoes is eight per cent less than in 1953.

In the aggregate the 1954 guides for 15 summer vegetables total 498,650 acres to be available for harvest (compared with 499,930 acres in 1953); for 13 fall vegetables the guides total 251,870 acres to be available for harvest (compared with 256,720 acres in 1953); for two summer melon crops the guides total 383,700 acres to be available for harvest (compared to 431,850 acres in 1953); and for sweetpotatoes the guide is 350,000 acres to be available for harvest (compared to 349,700 acres in 1953).

Vegetables for Processing

The guides for vegetables for processing are on a planted acreage basis. in contrast to other vegetable guides. For nine vegetables for commercial processing the guides total 1,688,541 acres to be planted (compared to 1,773,330 acres planted in 1953).

The late crop white potato acreage guide by states amounts to a national total of 1,022,700 acres (compared to 1,114,500 acres in 1953). With average yields the guide acreage should produce 272.2 million bushels of white potatoes. This would be a decrease of about six per cent in production, compared to the 1953 crop, but this supply should be sufficient to meet all known requirements. THE END

NEW

★ **Low-Seat Case Tractor** gives you eager 2-plow power. High-torque, heavy-duty engine has lugging ability for hard pulls.

★ **Low platform,** one step from the ground, in front of fender—no climbing over rear-mounted implements. Driver can sit or stand.

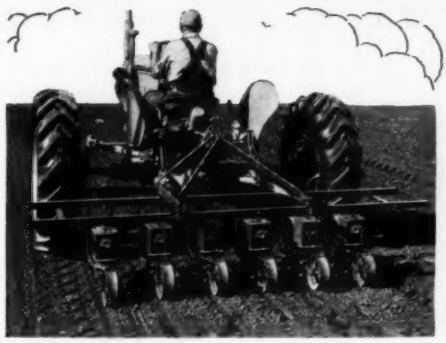
★ **Low Bodyguard® seat,** suspended on torsional rubber springs, absorbs shocks for all-day riding comfort. Easy to get on; handy to controls.

★ **Full crop clearance** to cultivate up-front with "look-ahead" cultivator—or behind with Eagle Hitch mounting of sweeps or shovels.

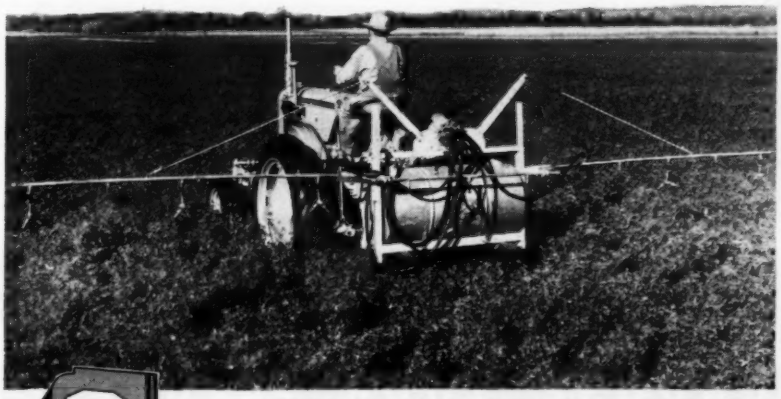
★ **Adjustable tread,** front and rear, fits wide range of row spacing. Low center of gravity gives remarkable stability on side slopes.

PLUS ONE-MINUTE EAGLE HITCH

Famous "hook up sitting down" makes implement changes quick and easy. Constant-depth principle of Eagle Hitch helps you do better work, too.



Eagle Hitch Economy Tool Bar takes wide variety of tillage teeth, sweeps and shovels, as well as planter units. Low cost lets you have several tool bars, keeping tool set-up on each while you make one-minute changes of complete implement. Works with all models of "VA" Series.



Field spraying goes fast with spray rig on Eagle Hitch utility carrier, as shown here with high-clearance model of Case "VA" Series. Constant Hydraulic Control provides instant adjustment for height of nozzles to suit conditions. Utility carrier mounts in a minute, lowers to load, lifts level, hauls bags of fertilizer, crates of produce, barrels, boxes, bales. Eagle Hitch implements include pivot-action plows and tandem harrows that cut full width on curves, without side-thrust, because they pivot at proper point—in implement itself. Whatever size of tractor you need . . . from low-cost 2-plow to 5-plow Diesel . . . see your Case dealer or send for catalog. Write J. I. Case Co., Dept. C-134, Racine, Wis.

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There is no substitute for time-tested Triangle Brand Copper Sulphate . . . used successfully by growers for over fifty years.

Write for the latest literature on the preparation, uses, and advantages of Triangle Brand Copper Sulphate.

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Enclosed find $. . . . . for which please send me the magazines marked with an X.

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A POTATO PLAN

This cost-of-production insurance plan, presented during the Suffolk County Potato Growers convention at Riverhead, L. I., on February 10, may have great merit. Potato growers are urged to express themselves on the idea. Send your comments and criticisms to The Editor, AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

THERE are present in the existing agricultural programs concerning acreage allotment and support prices several inherent factors which have a definite tendency to destroy the respective programs. They are: 1) the natural tendency when acreage is restricted to plant only the best land; 2) to produce more by better use of fertilizer and water; 3) to enlarge the operation in order to secure the same proceeds by acquiring more land with allotment; 4) a premium is automatically put upon finding legal loopholes to increase allotments on the basis that the government has plenty of money; 5) production is frozen in existing areas and price differentials are also made inflexible; 6) the programs are open to manipulation by politically powerful states and regions.

In view of the above there has been considerable interest in the Northeast in a voluntary farm program having some factors in its makeup which might assure its eventual success. This is an attempt to condense and assemble the thinking from many sources into a possible program which might be practical in the Northeast and which we will have to call "Price Insurance."

Insurance Program

The basic premise is that over one or more complete cycles any commodity must return to the producer cost of production plus a reasonable profit. Therefore an insurance program on the mutual basis is possible. Potatoes might be a crop to start with, for they are perishable, with a three- to five-year cycle, and only 20 counties in the nation produce the bulk of the crop. Furthermore, potato growers are in a mood to try something.

After enabling legislation and national referendum, district associations might be set up in each county or district similar to Production Credit and these associations be provided with government capital or credit to be retired over a long period of years out of association earnings, and the associations might issue policies insuring individual farm operations up to 75 per cent of cost of production under the following conditions:

1) That the applicant present figures showing his expected cost of production and pay a certain per cent premium upon *his* figures for which the association would issue a policy insuring 75 per cent of the value of *his* figures.

2) In case of loss the operator must show itemized receipts and sales tickets for his total production substantiated to the satisfaction of the association and the association would then pay to the policyholder the difference between such receipts and 75 per cent of his cost of production figure.

3) That the association not be required to take all risks.

4) Preferential rates might be given to operators with low loss history, and rates for different associations should reflect such factors as irrigation, nearness to market, etc., but each association would be held responsible for its own successful operation.

5) No policy should exceed $50,000, and no "in-and-outer" will be taken (a three-year policy might solve this).

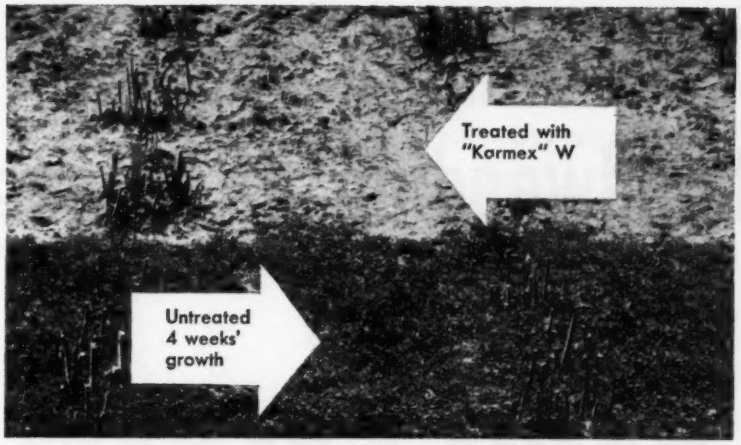
We have life insurance, health insurance, hail insurance. Why not cost-of-production insurance?

Advantages of Program

Some of the advantages of such a program are: 1) Farmers will be operating their own program and will be personally interested in its success. 2) Farmers would be paying in every year but drawing out only when they really need it and, like other insurance, it would be "deductible." 3) It would allow free movement of the market and would not encourage overproduction (at 75 per cent of cost). 4) As actuarian figures become available the rates would reflect the relative position of competing areas and even individuals. 5) It would result in much better public relations and, if advisable, could do publicity work. 6) It would definitely help an operator to obtain credit, for he could assign his policy to cover a loan.

In conclusion, it should be pointed out again that this is not a proposed program. It is an attempt to get before farmers some of these ideas, in themselves not new or original, with the hope that a voluntary, far-sighted farm program may be developed which will benefit both the producer and consumer. THE END

Working drawings for an attractive roadside market with movable racks and overhanging roof are available for 50 cents from AMERICAN VEGETABLE GROWER, Willoughby, Ohio.



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Herbicide

For low-cost control of weeds in asparagus

KARMEX® W a new substituted urea herbicide, provides growers new efficiency and economies in controlling weeds in established asparagus beds. Extremely low rates of application have proven highly effective in field trials conducted in all important asparagus-growing areas.

ECONOMICAL Low dosages, 1 to 4 pounds per acre, keep asparagus beds free of annual weeds and grasses for 6 weeks or more.

EASY TO USE A wettable powder, ready to mix with water. Apply as a pre-emergence blanket spray and again as soon as possible following completion of harvest.

OTHER FARM USES Use "Karmex" W at higher rates of application to kill weeds and grass around farmyards and building areas for a season or longer.

Get Karmex® W at Your Dealer's Now!

See for yourself how this new herbicide will cut down on your weed-control costs this spring. Consult your local agricultural authority on dosages and timing of applications.

On all chemicals always follow directions for application. Where warning or caution statements on use of the product are given, read them carefully.

DU PONT REG. U.S. PAT. OFF. **Karmex® W** *Herbicide*

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Sprayed on young weeds, Cyanate kills them on contact, permitting the onion crop to grow to full size unhampered by choking weeds. Cyanate is water-soluble, easy to apply. Breaks down to form compounds containing ammonia and potash. Will not stain work clothing. Equipment cleans easily with plain water.

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106 Euclid Ave. **AMERICAN VEGETABLE GROWER** Willoughby, Ohio

PESTICIDES

(*Continued from page 11*)

TDE (*DDD*) and *Perthane* are similar to DDT but are much less toxic. They have been specifically used against caterpillars and other leaf-feeding insects on such crops as lettuce and cabbage that are close to harvest. Their low toxicity is a distinct advantage on problems that occur near harvest. However, some of this advantage is lost in their inability to control as many insects as well as does DDT.

Dieldrin and *Heptachlor* are new materials that are showing considerable promise in the vegetable field. They control leafminers, stink bugs, grasshoppers, beetle larvae, seed corn maggots, wireworms, thrips, cucumber beetles, leafhoppers, weevils, true bugs, grasshoppers, crickets, and many other pests. As they are new materials, much work needs to be done on them but they hold considerable promise for the vegetable grower. Their high toxicity and detrimental effect on beneficial insects may hold them back but eventually we will learn how to work with them.

Aldrin is another new material that shows much promise, but it probably isn't as good an all-around insecticide as dieldrin. Specifically it is one of the best materials available on grasshoppers but its use will probably be limited.

Endrin and *isodrin* are new compounds that hold great promise for many of our pest problems. Although it may be several years before they are fully evaluated, we can expect a great deal of use from them.

Phosphates for Mites and Aphids

Among the phosphates, *parathion* and *TEPP* are the two best known. They have many uses and are especially good on mites and aphids. Parathion has a residual effect that must be taken into account before using it. It is one of the most poisonous materials available today. It is one of the best insecticides available but its usage is somewhat restricted by its high toxicity to humans. TEPP does not have quite the range or ability of parathion but plays an important role in vegetable production because of lack of residual effect. It is frequently used for aphid control just one or two days before harvest. There is no residue after 24 to 36 hours and for that reason is a very valuable material. In regard to acute toxicity it is even slightly higher than parathion and extreme caution must be used in applying it.

Malathion is another new phosphate material that holds a great deal of promise for the vegetable grower. It affects nearly the same pests as parathion and has the added advantage of

having a toxicity even lower than DDT. It has some residual effect which is an advantage over TEPP but it is not so persistent that there is any great danger from its use. It will control spider mites, aphids, scale insects, leafhoppers, some caterpillars, beetles, thrips, and many other pests. This material and others of this same nature that are being developed should prove to be a boon to the vegetable grower.

Systemics

Systemics such as *demeton* (Systox) and *OMPA* are capable of doing an excellent job on spider mites and aphids of vegetables. However, they cannot be used at this time because there is not enough information on how they act in the plant. These materials are absorbed into the plant and then kill the pests that suck the plant juices. As they are in the same toxicity category as parathion and TEPP we cannot take a chance on using them on a crop that will be consumed by man or animals. However, work is progressing on methods of analyzing for these compounds and in the near future either these or some similar materials will be developed that will do the job we want done without hazards. This type of a material is the nearest thing we have to our ideal pesticide.

In recent years there have been developed several new materials which are strictly acaricides (miticides) and they are finding a very useful place in our pest control picture. Some of these are *Ovotran, Aramite, Genite 923,* and *sulphenone.* These materials affect only spider mites and from this standpoint are very useful as they take full advantage of the use of natural enemies of these pests. By affecting only mites, natural enemies are allowed to increase and frequently the combination of these two factors gives much better control than either one could do alone.

We cannot forget many of our old standards such as the arsenicals, *pyrethrum, rotenone, cryolite,* and others but their usage is well known to all and they still play an important part in our pest control picture.

The value of pesticides in vegetable crop production is hard to evaluate on a straight dollars and cents basis. They have without question been one of the most important factors in recent years in the increased production and improved quality of the vegetables produced in this country. THE END

Read the advertisements and remember advertisers will be glad to send you catalogs, specifications, and prices. Be sure to say you saw it in AMERICAN VEGETABLE GROWER.

handy helpers

SPRAYING SYSTEMS
GunJet
SPRAY GUNS

For spraying all "hard to reach" places. Ruggedly built guns for pressures from 30 to 800 pounds. Adjustable from straight stream to cone spray. Balanced for easier handling. Write for Bulletin 65.

for better spraying at lower cost also ask your dealer for

SPRAYING SYSTEMS
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SPRAY NOZZLES

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Famous for proved performance. Gives you the most from equipment and chemicals. Choice of over 400 interchangeable orifice tips for every spraying need.

SPRAYING SYSTEMS
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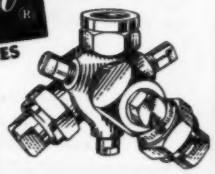
SPRAY NOZZLES



spray up to 66 feet wide with one compact assembly . . . for grains and grasses or liquid fertilizers. Write for Bulletin 66.

HOW SOLD . . . Spraying Systems Co. products are supplied by leading original equipment manufacturers and their dealers everywhere.

SPRAYING SYSTEMS CO. 3232 Randolph Street • Bellwood, Illinois

A Real Money-Maker!

a
PROVEN WAY
to make
BIGGER PROFITS
from your
RED BEETS
and CARROTS, etc.!

Harvest Up To 6 Acres A Day

The Scott-Urschel Red Beet and Carrot Combine—originally distributed on a rental basis—is now available for direct sale. Because of its speed of operation and labor saving features, it is ideally suited for farmers doing large acreage work. In fact, it is suggested that one machine be purchased jointly by several small acreage farmers, as the Scott-Urschel's capacity is normally greater than needed for the small size farm.

It is a rugged, field-proven combine that soon pays for itself by harvesting your crop more economically. Write for all the facts today!

COMPARE THESE ADVANTAGES:

- Allows beets and carrots to be harvested as needed—stock piling not necessary.
- Increases yield by getting *all the beets and carrots*—even the smallest ones.
- Shortens harvest season being able to operate under bad weather conditions and in almost any type soil.
- Does not tie up tractor during harvest—may be easily unhitched at any time.

DIGS, TOPS, AND LOADS IN ONE EASY OPERATION!

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THE SCOTT VINER COMPANY

1224 Kinnear Road, Columbus 8, Ohio

VARIETIES
YOU SHOULD KNOW

Burpee's Surecross
Hybrid Sweet Corn

Join the many market growers who are enjoying bigger profits with this high-yield improved main crop yellow hybrid, introduced by Burpee.

The handsome, thick, deep-kerneled ears have 16 or 18 rows. Their creamy yellow color holds its fresh appearance on the market, as well as in the can or frozen food pack.

Surecross matures in about 88 days. There are usually 2 ears to each 7 to 7½ ft. stalk, held at the right angle for easy harvesting. The tight husks keep corn borer damage at a minimum.

A. R. Jungunger
MANAGER,
MARKET GROWERS DIVISION

W. ATLEE BURPEE CO.
Seed Growers
PHILADELPHIA 32, PA.
CLINTON, IOWA RIVERSIDE, CALIF.

Don't forget!...

Parathion, when used to control one insect, controls others present at the same time. Here is real economy and efficiency.

AMERICAN CYANAMID COMPANY
New York 20, N. Y.

KILL WEEDS

(*Continued from page 9*)

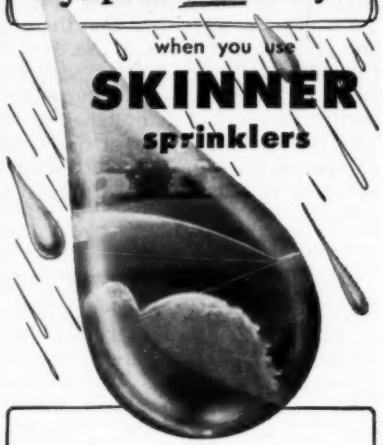
TCA. At rates of five to eight pounds per acre of the 90 per cent sodium TCA, this herbicide is almost specific for seedling grasses. It is now extensively used as a pre-emergence spray on beets and is finding a place in potatoes, asparagus, field-seeded cabbage and tomatoes, and several other vegetables. However, some broadleaved crops are severely injured and cannot be treated; beans, sweet-potatoes, and the vine crops are notable among these. Since TCA is primarily a grass killer its use is limited to areas where grasses are serious but it can often be combined with other herbicides so that both grasses and broadleaved weeds are killed.

Alanap 1 (N-1 naphthyl phthalamic acid). This new weed killer, on the market for the first time in 1953, is being used most extensively on the vine crops. Muskmelons, cantaloupes, cucumbers, and watermelons are especially tolerant and have been sprayed both pre- and post-emergence. Certain varieties of pumpkins and squash are sensitive but others can be treated. For good weed control the treatment should be made as soon as possible after field seeding or transplanting. Results have been best on the lighter soil types and a large number of annual grasses and broadleaved weeds are easily controlled. Although best known as a selective spray for vine crops, it is also doing a good job in asparagus.

CMU is an important new herbicide but its use thus far has been mostly as a soil sterilant for non-crop land. It is effective on annual weeds at very low rates (one-half pound to two pounds per acre) and lasts for several weeks. Unfortunately it has caused injury to almost all vegetables grown from seeds on which it has been tried. Good results have been obtained on asparagus but the possible accumulative effect over a period of years has not been studied. There is some possibility of using it on certain other vegetables but much more experimental work is needed.

Crag Herbicide 1 (SES). This chemical weed killer is almost inactive on the foliage of plants but once in the soil it is converted to active 2, 4-D by micro-organisms. The soil, however, must be warm and moist for this activation to occur. It has found widest use for control of germinating weeds in crops that have some tolerance to 2, 4-D. Strawberries are the best example but it can also be used on raspberries, blackberries, and asparagus. It is applied following a clean cultivation and hoeing since it controls only germinating seeds and

dry spells can't hurt you-
when you use
SKINNER
sprinklers



Skinner sprinklers are the best crop and pasture insurance you can buy. They give you the uniform coverage and proper penetration needed for maximum growth . . . are sturdily constructed for trouble-free service and long life . . . and are available in a complete range of types and sizes to meet any need. Write today for full details.

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246 Water St., Troy, Ohio

...for over a half century

DO HOURS of GARDENING
WORK IN MINUTES WITH
ARIENS
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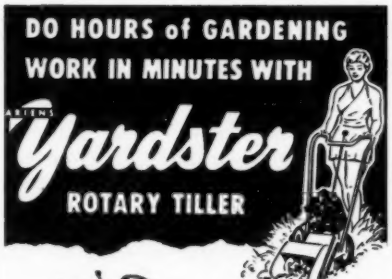

Prepare seedbed without spading; cultivate all season long without hoeing!

Two 10" cog-tire wheel

Make gardening easy with the Ariens Yardster rotary tiller! Tills 12" wide, up to 6" deep. Non-winding, non-breakable steel "L" tines. Complete hood protection. 2 H. P. engine. Optional 2-speed wheel drive. Rotary mower, power sprayer and other attachments. Priced amazingly low!

See your dealer or write:

Ariens

183 Calumet Street Brillion, Wisconsin

several applications are often made during the season. *Sesin* is a less soluble form of this herbicide that is being tried experimentally.

Methyl bromide is a soil fumigant that is finding a real place for control of weeds and other soil pests in plant growing beds. Applied under a gas-tight cover, it kills dormant weed seeds, yet leaves the soil in a few days making the planting of crop seeds possible. Due to expense and method of application it is not practical for field use but in the plant bed it can save many hours of hand weeding.

Other herbicides. Pre-emergence applications of *2, 4-D* on sweet corn and the use of both 2, 4-D and *calcium cyanamide* on asparagus and certain other vegetables is well known. However, the new chemicals are offering strong competition to these older herbicides. The sodium salt of PCP has been used for several of the same crops as the dinitro compounds but as yet has not been readily available to growers. *Endothal* has given good results in experimental trials as a pre-emergence spray for beets. Many other herbicides of the pre-emergence type are also being tested but a great deal more work needs to be done before they can be suggested.

How Long Will the Effects Last

Growers are often concerned about the possibility of injury to a sensitive crop that may follow one which was treated with an herbicide. There seems to be practically no danger of this happening with the treatments now being used on vegetable crops. At the rates used these chemicals ordinarily break down or are leached away in from four to eight weeks. The one possible exception to these statements is CMU. This material has a long residual life in the soil, being resistant to both breakdown and leaching. More information is needed on this weed killer before the hazard to succeeding crops will be known.

Every chemical that can be used on a certain crop without injury will fail to control some kinds of weeds. If these resistant kinds are not present in a field there is no problem but usually we have them to contend with. Fortunately a crop will often tolerate more than one herbicide, each chemical controlling some weed that the other will not. By combining two such herbicides a much more effective job of weed killing can be done. Combinations of 2, 4-D with TCA or chloro-IPC are already in commercial use and many other chemical mixtures have shown good results in experimental trials. As new products come on the market the possibilities for herbicide combinations will be even greater. THE END

The Original Soluble Fertilizer
for
VEGETABLE GROWERS

VHPF

(pronounced "Vip")
6—25—15
plus essential secondary elements

Costs Little --- Does Much

use 6 lbs. per 100 gals.

What VHPF Will Do

Reduces wilting—grows sturdy plants
Gives plants quicker start—develops more roots
Saves replanting costs—sprout seed faster
Increases yield—improves quality

Write for booklet and prices

MILLER CHEMICAL & FERTILIZER CORP.
BALTIMORE 18, MD.

MORE AND BETTER **POTATOES**

Activo is Nature's own way of *energizing* soil for best crop yields with billions of friendly organisms, hormones, vitamins, minerals, BIOTICS. (Users report "Better than fertilizer!") Just apply to seed. More potatoes or your money back. Trial pkg. for 3-6 bu., $1 p'pd. Dealers, or **THE ACTIVO COMPANY, Bridgeton 66, Indiana**

Advertisers will be glad to send you details of their products. Be sure to mention AMERICAN FRUIT GROWER when you write.

jari POWER SCYTHE
(SELF-PROPELLED)

Cuts easily through heaviest high growth of weeds, brush, grass, even 1 inch saplings. Large wheels work over rough ground. Safe operation, will not throw objects. No exposed blades.

Jari Sr. is easy to handle, ruggedly built to perform where other power machines won't. If you have a tough cutting problem, it will pay you to investigate Jari.

3 models to choose from—Attachments for reel cutting, spraying and snow plowing. Write for complete information.

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BOOKS FOR YOUR HOME LIBRARY

AMERICAN POTATO YEARBOOK, 1953 edition, edited by John C. Campbell. 76 pages of vital information to the potato grower, shipper, dealer, and others interested in the potato industry. Articles include development of seed potato certification in the U. S., varieties, production, rules and regulations affecting seed potato shipment. An important feature is the list of research projects with names of individuals engaged in conducting research on Irish potatoes in the U. S. Valuable statistical information and tabulations on seed and table stock production also are included.....$2.00
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DISEASES OF VEGETABLE CROPS by John C. Walker. The book thoroughly covers the diseases of such vegetables as asparagus, beans, celery, onions, etc. Each disease is discussed in regard to symptoms, cycle of development, and methods of control. It contains 629 pages and is well illustrated.....$7.50

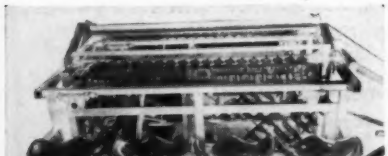
Books sent postpaid on receipt of check or money order.

AMERICAN VEGETABLE GROWER
Willoughby Reader Service Dept. Ohio

NEW FOR YOU

—to increase your profits

Plant Mechanically



Each year growers spend a large amount of money planting a crop. Recently we saw a new machine that will reduce the high cost of transplanting substantially. This unique machine was designed in Glasgow, Scotland, and is being manufactured by Elco Products. The transplanter can be drawn easily by a medium tractor and is manned by two to six persons. Transplanting is fully automatic. Rubber-clad fingers release the plant at a predetermined depth behind a specially designed plow, causing a turbulating action in the soil which spreads the roots and at the same time covers the root system. Packing wheels immediately pack the soil around the plant, discharging all air from the soil. Known as the Elco Transplanter, the machine is adjustable from 18 inches to 60 inches. The equipment can be adjusted for spacing plants from three inches to 72 inches. It handles with ease plants from four to 20 inches long. Be sure to write Harvey Ludwig, Elco Products Corp., West Allis, Wis.

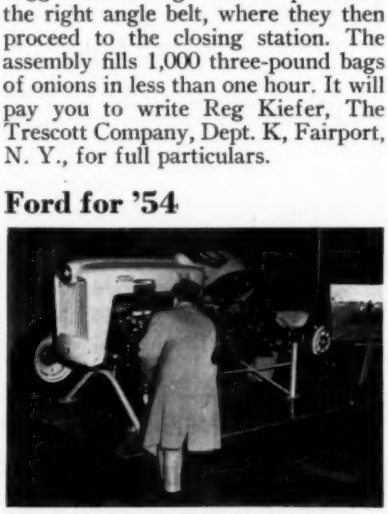
Don't Lift—Don't Carry

The new Burrows lightweight aluminum bag conveyor is designed to cut costs. It is equipped with a Goodrich rubber belt which holds the packaged bags and carries them up the steepest elevation. Another unique feature of this conveyor is that a method of attaching undercarriages to the body of the conveyor has been perfected so that the conveyor can be placed in any position easily and quickly. This equipment may be just what you have been looking for. Why not write Parke Burrows, Burrows Equipment Company, 1316 Sherman Ave., Evanston, Ill., and ask him to send you their interesting booklet?

Trescott Simplicity

The new Trescott assembly speeds and simplifies the packaging of onions and potatoes. The rotary table automatically supplies an even flow of vegetables to the Twin-Belt Autobagger. Filled bags are then placed on the right angle belt, where they then proceed to the closing station. The assembly fills 1,000 three-pound bags of onions in less than one hour. It will pay you to write Reg Kiefer, The Trescott Company, Dept. K, Fairport, N. Y., for full particulars.

Ford for '54

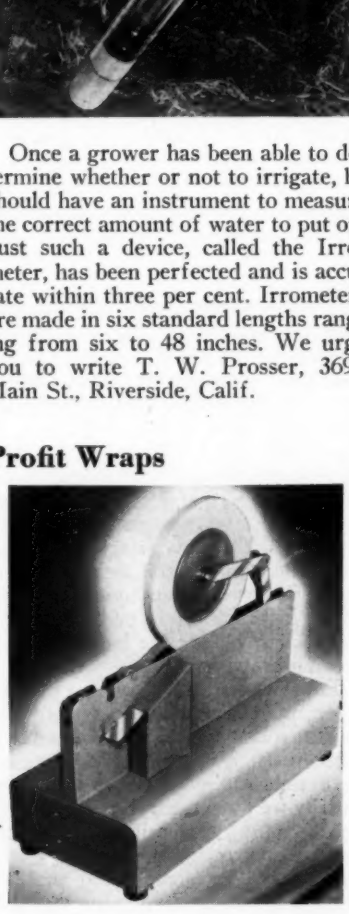


At the recent Vegetable Growers Association of America convention in St. Louis, the new Ford tractor was presented to growers in a cutaway fashion so that all of the improvements could be seen. The new Red Tiger engine and the many wonderful Ford improvements make this tractor one every grower should know about. Why not get the new Ford booklet entitled "New Ford Tractor." Write Jim Ewing, Midland Ford Tractor Co., Highway 66, Robertson, Mo.

Smart Irrigation

Once a grower has been able to determine whether or not to irrigate, he should have an instrument to measure the correct amount of water to put on. Just such a device, called the Irrometer, has been perfected and is accurate within three per cent. Irrometers are made in six standard lengths ranging from six to 48 inches. We urge you to write T. W. Prosser, 3695 Main St., Riverside, Calif.

Profit Wraps



Recently we saw a new bag sealing machine which is ideal for both the large and small operator. It speeds up bag sealing, wire coding, tagging, labeling, and binding with a tight loop of tape. The "Tape-Lok," is inexpensive and automatically applies tape to any size package. It weighs only eight pounds. Write Nelson Pippert, American Specialty Co., Amherst, Ohio.

OPPORTUNITY ADS

Only 25c a word for one-time insertion; 20c a word for two-time insertion; 15c a word for four-time insertion—CASH WITH ORDER. Count each initial and whole number as one word. ADDRESS AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

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RUN A SPARE-TIME GREETING CARD AND Gift Shop at home. Show friends samples of our new 1954 All-Occasion Greeting Cards and Gifts. Take their orders and earn up to 100% profit. No experience necessary. Costs nothing to try. Write today for samples on approval. REGAL GREETINGS, Dept. 119, Ferndale, Michigan.

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LATE MODEL SPEED SPRAYER FOR SALE. Any reasonable offer. BOX 54, Fairhope, Ala.

AMERICAN SPECIALTY BUNCHED TOP Washer. 5 H.P., 220 volt. Used one-half hour. Cost $1,800.00, price $1,000.00. F. J. WITHERLY, Finson Rd., Bangor, Maine.

GOOD USED FARM CONTAINERS—SPLINT handle baskets, bushels, boxes, hampers, bags, nailed and wirebound crates. Truckload or carlots. Call or write ZELVY BROS. CONTAINER CO., 2005 Orange Ave., Cleveland, Ohio.

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FREE BOOK—PILES, FISTULA, COLON-stomach, associated conditions. Newest scientific procedures. THORNTON & MINOR HOSPITAL, Suite C-312, Kansas City 9, Mo.

MISCELLANEOUS

BUILD YOUR OWN ELECTRIC GERMINA-tor for those slow germinating seeds. Excellent for old seed. For large or small growers. Send only $1.00 for plan. HIAWATHA VALLEY GARDENS, Box 270, Red Wing, Minn.

VEGETABLE SEEDS AND PLANTS

SWEET POTATO PLANTS, 1,000 OR 100,000. ROBERT SIMMONS, Sharon, Tenn.

CABBAGE PLANTS:
2000 for $3.00, 6000 for $8.40
ONION PLANTS:
6000 for $4.50
DELIVERY NOW UNTIL NEXT JUNE
SHIPPED BY EXPRESS, F.O.B. HERE
WRITE FOR OUR COMPLETE LIST
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BOX 666 OMAHA, TEXAS

TOMATO PLANTS—ALL LEADING VARI-eties, certified, $3.50 per thousand. CABBAGE PLANTS—ALL LEADING VARI-eties, certified, $1.75 per thousand. JOHN THORNHILL PLANT COMPANY, Tifton, Georgia.

SWEET POTATO PLANTS, DELICIOUS IM-proved Portoricos postpaid: 200—$1.25; 500—$2.25; 1000—$4.00; 2000—$7.50. SMITH PLANT FARMS, Gleason, Tenn.

WANTED TO BUY

WANTED USED PLANET JR. WITH SEEDER and fertilizer attachment—good condition, low price. JOHN KLEMENTS, JR., Huntsburg, Ohio.

High Pressure SPRAY HOSE

800 Lbs. Working Pressure

Flexible, High Pressure Horticultural Spray Hose. Resistant to Oils, Chemicals, Insecticides and all D.D.T. Sprays.

Each length complete with High Pressure Couplings attached to fit all Pressure Sprayers.

Hose is New, First Grade, Guaranteed!

LENGTHS AVAILABLE	INSIDE DIAMETERS 3/8"	1/2"	3/4"
25 ft.	9.00	10.25	15.75
50 ft.	16.50	19.00	29.50
75 ft.	24.00	27.75	43.25
100 ft.	31.50	36.50	57.00

Postpaid If Cash or Check With Order

Agricultural Rubber Products Corp.
61 Barclay St. P. O. Box 496
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ROTO-HOE complete $134.

ROTO-HOE GARDEN TOOLS

Brings You the Easy

NEW and PROVEN WAY to buy POWER EQUIPMENT

Years of experience in perfecting ROTO-HOE plus plenty of "garden testing" by thousands of users, insures your satisfaction. Send for our new free 16-page full color catalog which can save you hundreds of dollars. Look at these ROTO-HOE advantages:

Low first cost, complete ROTO-HOE only $134. • Many thousands of satisfied customers. • Variety of low cost attachments to do extra jobs. • Minimum storage space needed —hang attachments from the garage wall. • Low cost replacement parts if ever needed.

You'll want to know more about just what ROTO-HOE and attachments can do to make your work easier. Write today for free color catalog and name of nearby dealer.

ROTO-HOE & SPRAYER COMPANY
Box 53-V Newbury, Ohio

WHAT'LL IT MIX WITH?

That is the important question in economical spraying. The compatible nature of spray materials is mighty important in safe and effective spraying and AMERICAN FRUIT GROWER has produced an ingenious

SPRAY COMPATIBILITY CHART

which tells at a glance just what materials will mix safely. Printed in three colors, mounted on Bristol board paper, it is an accurate guide in the safe and successful mixing of all spray chemicals.

Better send for a copy—25c each

AMERICAN FRUIT GROWER,

Willoughby, Ohio.

Enclosed is 25c. Send Compatibility Chart to:

Name .....

Address .....

City ..... State .....

(Offer good only in U.S.A.)

The Improved

ARCO "OPEN RING" *RUBBER BANDS*

QUICKER to pick up—FASTER to apply—STURDIER all around.
SAVES time and money. IN ALL STANDARD SIZES.

Send your order now, this handy way . . . **ARCO** ( ) RUSH .. LBS. NEW OPEN RING BANDS
( ) RUSH SAMPLES, PRICES

Firm Name _____

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City _____ State _____

ALLIANCE RUBBER CO.

ALLIANCE, OHIO or HOT SPRINGS, ARK.

Marketing Study Pays

AS we lay plans for our planting season it seems that it would be wise to give some thought to the marketing of the crops we are growing. So often we plant a given acreage to certain vegetable crops without giving one thought to what we will do with them when harvesttime comes. The wise grower is the one who foresees his market before he plants his crop.

It is not always possible to know exactly what you can or will do with a particular crop weeks before harvest. Nevertheless, we can work towards a certain marketing goal. Most market gardeners produce for local consumption while the large truck farmers must produce for shipment into large consuming areas. Each is skilled in his own production methods, and, likewise, each must be skilled in his own marketing methods. We seem to know the tools of production so much better than we do the tools of marketing.

Periodic market reports from both government and private sources are tools to be used in designing our marketing programs. Thorough study of them for one or more years for a given market could help a grower determine which crops would be most profitable for him to grow this year and the ones least likely to make him a profit this year. Such knowledge of market conditions of the past will help him work out a plan for increasing acreages of certain vegetables while reducing acreages of others. It balances the market system.

Marketing agreements are other tools of the large truck farmers to help them market their abundant crops orderly and in some relation with consumption. They have helped to strengthen the prices of a given commodity through a particularly heavy marketing period. They serve a definite purpose.

Another tool in marketing is a system of cost accounting. While not directly affecting the actual marketing of a crop, knowing just what it is costing you to produce a given crop tells you what price you must receive in order to make the necessary profit. Crops on which you cannot reduce costs of production may be the ones you should cut acreages on too. Likewise, those crops on which you can make good profits may be the ones for you to expand.

Advertising and sales promotion can help greatly to expand consumption of certain vegetables. We certainly have not exploited this field adequately yet. It is a tool that can be used effectively against market gluts, as well as a regular market practice.

High quality produce is the best aid to marketing. Perhaps those vegetables which you can grow to perfection are those you should emphasize. We are in the business to stay, so if we do those things which we can do best, we are doing our utmost.

Making a Forecast

EVERY few months the Outlook and Situation Board of the U. S. Department of Agriculture gets all its facts and figures together, takes a deep breath and makes a forecast on the vegetable situation. These forecasts are written in general terms and don't seem to mean much at first glance. But if they are carefully analyzed in the light of conditions in your own market they can be a valuable aid.

The latest report says that demand for fresh vegetables is expected to continue about as strong in the first quarter of 1954 as the same period in 1953. During the first quarter, heavy storage supplies of 1953 crop potatoes, cabbage, and onions are expected.

Larger tonnages are also expected for sweet corn, lettuce, escarole, cucumbers, tomatoes, beets, and artichokes. Smaller tonnages are expected for cabbage, carrots, celery, snap beans, shallots, cauliflower, kale, green peppers, and green peas.

As far as canned and frozen vegetables are concerned, the 1953 commercial pack plus carryover stocks are larger than they were a year earlier. There is a possibility of slight easing in demand by the time 1954 packs are ready for distribution. It is probable that canners and freezers will be a little bit conservative in planning their scale of operations for 1954.

Canned sweet corn, green peas, tomato juice, and snap beans probably are slightly to moderately larger in supply than a year earlier. Stocks are somewhat lower for canned asparagus, spinach, tomatoes, tomato paste, and other tomato products.

With frozen vegetables, the increase in the packs of asparagus, peas, and cut corn have been greater than the probable increase in consumption.

Production of vegetables for fresh market in 1953 was the greatest in history amounting to 10 million tons. The next highest mark was 9.8 million tons in 1950.

A Thought Worth Remembering

FRANK L. CLARK is the owner of the Clark Seed Farms and one of the best known potato growers in the country. He is thoroughly acquainted with growing and marketing potatoes from Florida to Prince Edward Island and has farms of his own in Tioga and Steuben counties, New York, and in Tolland County, Connecticut.

In a recent issue of the *American Agriculturist,* he made a point on acreage cuts which hit at the heart of the problem. Here is what he said, "Last spring I made a substantial cut in my potato acreage. I would have cut it more except for one thing. I couldn't forget the possibility that the government might set acreage allotments, and that if they did my allotment would be based on the acreage I had been growing. In other words, if I had cut my acreage more than I did, I faced the possibility of another drastic cut by a government control program. It is my opinion that this fact had a big effect on the 1953 potato acreage. . . . . the possibility of future government control of acreage encouraged farmers to maintain or increase their plantings. They did this to obtain a higher government acreage allotment in case such controls were later put into effect."

Mr. Clark goes on to say, "I understand that the well-established growers of some crops (for example, tobacco) are perfectly happy with acreage controls. I am also told that young fellows who want to grow tobacco and who cannot get an acreage allotment aren't so happy! Under a planned economy a young man does not have the opportunity to express his ability. A young man with high ability and one with low ability can go before a board for acreage allotments and each receive the same treatment."

Potato grower Clark has done some straight thinking which is worth remembering and repeating.

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